



Telecommunications Blackout

Modern telecommunication systems need power and what engineers call “backhaul”, the connections that link cell towers and exchanges to the national network. Much of the backhaul, usually fibre optic cables running along main roads, often parallel to power lines, was also knocked out by landslips and flooding. Because of this, they couldn't connect anyone anywhere even where cell sites still had power.

This caused telecommunication blackouts due to electrical outages and other critical infrastructure failures of cell sites (along with wireless internet) operated by Spark, Vodafone, and 2degrees in affected areas, including those run by government-appointed broadband providers and mobile services in sparsely populated areas.

This compromised communications between the Emergency Services, Civil Defence Emergency Management Regional Coordination Centres, Council Emergency Operations Centres, and isolated communities when they needed them most.

In recognition of this, Amateur Radio Emergency Communications (AREC) has adopted the “Winlink Global Radio Email” Check-In Net, as this will be the only Email service available. It is designed to operate without the Internet and is available to all Amateur Radio Operators.

Winlink Background

Winlink Express is the email operating software used worldwide for emergency communication during natural hazard events, disasters, and emergencies. It is also used by many government agencies, including military and humanitarian services, on non-ham frequencies.

The aim of the AREC Winlink Radio Check-In Net is to:

1. Practice for an Emergency Event
2. Test your skills and equipment.
3. Keep your software current and operation skills up to date.
4. Provide valuable information to AREC about how ready we all are for a communication blackout event.

Winlink Express features a simplistic feature set and uses the B2F extension radio transfer protocol to support limited-size attachments, multiple addresses and tactical addresses.

On a worldwide basis, Emergency Operations Centres (EOC) utilise Winlink Express as the preferred amateur radio-based digital messaging client because it supports multiple system features that include secure login to help prevent unauthorised access to the system. The network building blocks of the Winlink system consist of:

- a) Winlink Express client software used to link to local network nodes
- b) Local network nodes that are linked to local remote mail servers (RMS)
- c) Local remote mail servers (RMS) that provide access to redundant and mirrored common mail servers (CMS)

Winlink Express can be operated in a variety of configurable modes, such as peer-to-peer (P2P) connecting directly via RF to other Winlink Express or via a Telnet (Internet) connection. However, we would encourage those who do have the ability to send messages via radio to use this mode to test their equipment and show their capabilities.

PACE Communications

In an emergency response, a formal PACE (short for Primary, Alternate, Contingency, and Emergency) communication structure is required for use by Amateur Radio Operators and key lead agencies to capture, exchange and act on critical information quickly and effectively.

Admittedly, Incident Management Teams (IMTs) use voice communication to facilitate this process, but the volume of message traffic in an emergency will quickly outstrip the ability of a small number of local radio operators to pass all traffic successfully and promptly.

With the implementation of Winlink digital messaging, all Incident Management Teams will now be able to move a tremendous volume of message traffic in a fraction of the time required to send the equivalent traffic via voice.

Advisory

This advisory aims to get AREC Groups and radio operators to send an email to learn how to operate Winlink software, as it may be their lifeline in a telecommunication blackout. The broader scope of this project is to get operators using the Winlink Check-In process to develop and disseminate critical information that will prepare us to provide communications during major natural hazard events and declared national emergencies.

For amateur radio operators who are not already using Winlink, this document will help introduce and help you understand Winlink's operations, hardware, and software applications. The operational efficiency gained by AREC using the Winlink software is a game-changer, allowing fast, secure, and logged message transmission/receipt that will enhance Search, Rescue, and Emergency Management operations.

Knowing this, we would strongly encourage all AREC members and invite all non-members to participate and learn this mode. Please direct all questions related to any aspect of this project to Nigel Goldstone at kiwi_saila@yahoo.co.nz

How to Participate

The AREC Winlink Check-in Net is open all week, between 1901 hours on Sunday and 1900 hours the following Sunday. Any submission between these hours will be counted. The first thing operators involved need to know in an emergency is who Winlink Check-In needs to be sent to, who is available, what the situation is like at their location and their ability and capability to operate, and this is done by submitting a Winlink Position Report as per the example below.

Task 1 - Submit a Weekly Position Report

GPS / Position Report

GPS Serial Port: GPS Baud Rate:

IP Address: IP Port:

GPS Status

Error opening GPS connection: The port 'COM12' does not exist.

GPS Latitude: GPS Longitude:

GPS Speed: Knots GPS Course: True

☒ Automatically update grid square from GPS position:

Position Report

Your last position report was posted at 2024-02-08 05:01:36 UTC

Report Date/Time: UTC

(Latitude/longitude may be entered as decimal degrees, DD-MM.MMx, or DD-MM-SSx)

Latitude: Longitude:

Speed: Knots Course: True

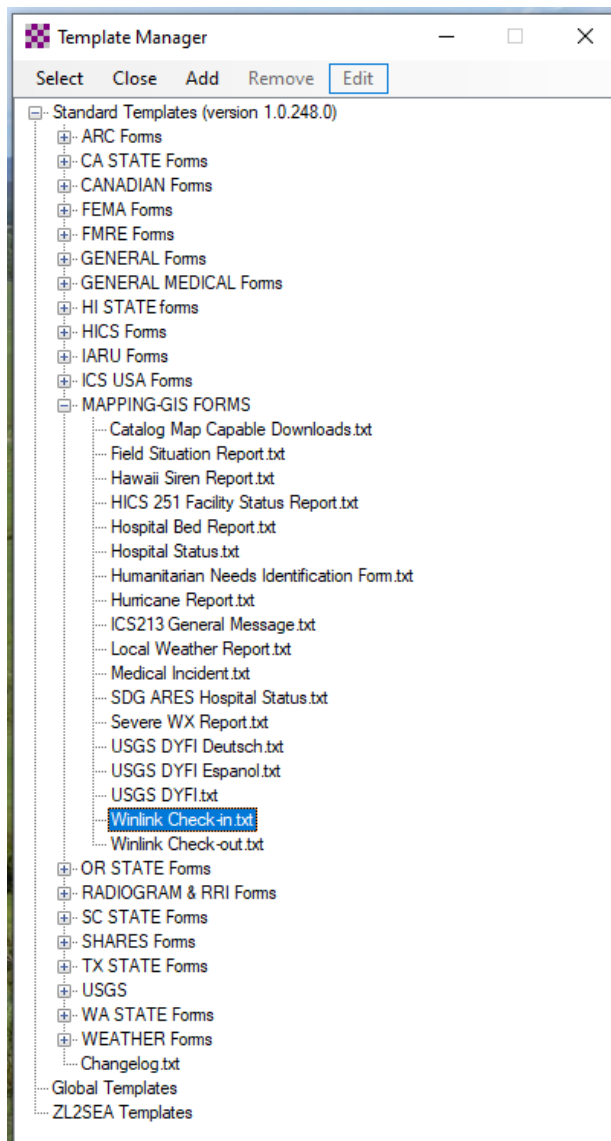
MGRS coordinates:

Comment - 148 Characters Maximum:

☒ If no GPS position, use position report location as my current location

Task 2 - Complete and Submit a Winlink Check-in Form to the Tactical Winlink Address AREC-CHECKIN

The Winlink Check-In Form Template is located in Winlink Express in the template section after you open a new message, as shown below.



Press the Setup Button at the top left and enter “AREC Weekly Check-In.” Then press OK to return to the form.

The image shows a small dialog box titled 'Enter Agency/Group Title'. It has a text input field containing 'AREC - Weekly Check-In'. Below the input field are two buttons: 'OK' and 'Cancel'. The 'OK' button is highlighted with a blue border.

Note: If you select the “Form Info” link at the top right, guidance (help) for each field will appear.

Section 1 - Station Information Box

- Complete the Form as shown in the example below.
- Note the message needs to be sent to the Tactical Address “AREC-CHECKIN” Plus, each of the regions, enter this in the To: Field no quotation marks example.

Winlink Check-In AREC Weekly Check-In				
Setup Click to add your agency/group name to title	Load Check-in Data	Form Info		
1. STATION				
a. Date/Time: <input style="width: 150px;" type="text" value="2024-10-10 05:43:23"/>				
b. To: <input style="width: 250px;" type="text" value="AREC-CHECKIN"/> Clear ALL "Send To" Entries.				
c. From: <input style="width: 80px;" type="text" value="ZL2SEA"/> d. Station Contact Name: <input style="width: 150px;" type="text" value="Nigel Goldstone"/> e. Initial Operator(s): <input style="width: 150px;" type="text" value="ZL2SEA"/>				

Section 2 - Session Information Box

- Complete as per the sample below but input the data that best represents your situation.

2. SESSION				
a. Type: <input checked="" type="radio"/> EXERCISE <input type="radio"/> REAL EVENT b. Service: <input checked="" type="radio"/> AMATEUR <input type="radio"/> SHARES c. Band: <input type="radio"/> NA <input type="radio"/> Telnet <input checked="" type="radio"/> HF <input type="radio"/> VHF <input type="radio"/> UHF <input type="radio"/> SHF				
d. Session: <input type="radio"/> Telnet <input type="radio"/> Packet <input type="radio"/> Pactor <input type="radio"/> Robust Packet <input type="radio"/> Ardop <input type="radio"/> VARA HF <input checked="" type="radio"/> VARA FM <input type="radio"/> Iridium Go <input type="radio"/> Mesh				

Section 3 - Location Information Box

- Complete as per the sample below, but input the data that best represents your situation.
- Note: add your branch number after your town or city. If you do not belong to an NZART Branch, just enter Home

3. LOCATION				
a. Location: <input style="width: 200px;" type="text" value="Kaeo, Branch 78"/>				
b. LATITUDE: <input style="width: 100px;" type="text" value="-36.418500"/> c. LONGITUDE: <input style="width: 100px;" type="text" value="174.723000"/> d. MGRS: <input style="width: 100px;" type="text" value="60HTE9585367223"/> e. GRID SQUARE: <input style="width: 80px;" type="text" value="RF73in"/>				
LAT/LON and MGRS default to the center of the grid square listed in Express Settings, unless a GPS is used or Lat/LON or MGRS must be entered manually. Without properly formatted GPS coordinates this form cannot be mapped in Winlink Express.				

Section 4 – Comment Information Box

- Enter your name and Call Sign, answer the 10 questions below, and answer Y or N and your score.

Emergency Communications Readiness Rating – Questions Form

N°	Questions	Y	N
1	Do you have radio equipment ready and available for Winlink HF communications in an emergency, both for home QTH and portable use?	Y	
2	Do you have radio equipment ready and available for Winlink VHF/UHF communications in an emergency at home QTH and portable use?		Y
3	Do you have a backup power supply for a power blackout at home QTH and portable use?	Y	
4	Do you have a backup power supply to operate in a power blackout at home QTH or remotely for 24-hour operation?		Y
5	Are you competent in sending Winlink emails, forms, and photos in an emergency via HF/VHF or UHF?	Y	
6	Are you competent in sending Winlink Point-to-Point and "Radio Only" messages?		Y
7	Are you competent in setting up a Winlink radio station unaided at a remote site and able to configure VARA software for maximum speed?	Y	
8	Have you a current Winlink email address and contact listing, and have you sent a message to your family and friends that you wish to contact in an emergency advising of this address?	Y	
9	Have you participated in an AREC Emergency Communication Exercise simulating a power and communication black-out event in the last 6 months?	Y	
10	Have you a current Winlink email address, "Contact listing", and have you sent a message to your family and friends that you wish to contact in an emergency advising of this address?	Y	
TOTAL Score ("Y" =1 and "N" = 0)		7	0

- Refer to the 10 questions below and score

4. COMMENTS: <small>Max Characters 500</small> Nigel, ZL2SEA, Q1=Y, Q2=N, Q3=Y, Q4=N, Q5=Y, Q6=N, Q7=Y, Q8=Y, Q9=Y, Q10=Y, Total 7

Note: The check form is complete; you can save the form to make it quicker for next week.

Section 5 – Submit the Form

- Post to Outbox and send as selected – Refer to the exemplar of the Completed Form

Winlink Check-in AREC Weekly Check-In				
Setup Click to add your agency/group name to title		Load Check-in Data		Form Info
1. STATION				
a. Date/Time: 2024-10-10 05:43:23				
b. To: AREC-CHECKIN		Clear ALL "Send To" Entries.		
c. From: ZL2SEA	d. Station Contact Name: Nigel Goldstone	e. Initial Operator(s): ZL2SEA		
2. SESSION				
a. Type: <input checked="" type="radio"/> EXERCISE <input type="radio"/> REAL EVENT		b. Service: <input checked="" type="radio"/> AMATEUR <input type="radio"/> SHARES		
		c. Band: <input type="radio"/> NA <input type="radio"/> Telnet <input type="radio"/> HF <input checked="" type="radio"/> VHF <input type="radio"/> UHF <input type="radio"/> SHF		
d. Session: <input type="radio"/> Telnet <input type="radio"/> Packet <input type="radio"/> Pactor <input type="radio"/> Robust Packet <input type="radio"/> Ardop <input type="radio"/> VARA HF <input checked="" type="radio"/> VARA FM <input type="radio"/> Iridium Go <input type="radio"/> Mesh				
3. LOCATION				
a. Location: Kaeo, Home QTH, Branch 79				
b. LATITUDE: -36.418667	c. LONGITUDE: 174.723167	d. MGRS: 60HTE9586867204	e. GRID SQUARE: RF73in	
LAT/LON and MGRS default to the center of the grid square listed in Express Settings, unless a GPS is used or Lat/LON or MGRS must be entered manually. Without properly formatted GPS coordinates this form cannot be mapped in Winlink Express.				
4. COMMENTS: Max Characters 500				
Nigel, ZL2SEA, Q1=Y, Q2=Y, Q3=Y, Q4=Y, Q5=Y, Q6=Y, Q7=Y, Q8=Y, Q9=Y, Q10=Y, Total=10				
<div></div>				
Submit		Save Check-in Data		Reset Form
Ver 5.0.11				

All messages will be acknowledged, and a list of participants and a map of your check-in will be returned to all. We trust you find this exercise useful. We will add a different training exercise once a month.

Please encourage as many of your ham friends as possible and provide help to those who need it.

Remote Help

If you cannot find the answers you need, please reach out by posting your:

- Digital WINEX Questions go to Nigel Goldstone ZL2SEA at kiwi_saila@yahoo.co.nz
- Phone COMEX Questions go to Simon Osborne ZK6EXC at RMCent@arec.nz

Above all, have fun, make this a learning experience, solve problems, and set examples.

Thanks for your participation, 73 AREC

Nigel Goldstone ZL2SEA

Winlink Reference Sites

Winlink Website <https://winlink.org/>

Winlink Software Express <https://downloads.winlink.org/User%20Programs/>

VARA modem Software <https://downloads.winlink.org/VARA%20Products/>

VARA HF

VARA FM

Packet Sound Modem <http://uz7.ho.ua/packetradio.htm>

Training Videos

<https://www.youtube.com/playlist?list=PL-7mirT-kjfs84FQzLr-qv066KI94rtYM>

Wave Talkers - Winlink Basics

https://www.youtube.com/playlist?list=PLcBrg-5drc84N1GU9zhWwCF9HisFc8L_a

Wave Talkers - Winlink Portable

<https://www.youtube.com/playlist?list=PLcBrg-5drc85PthVa48UCS6FSDipvHcqo>

Wave Talkers - Winlink – Gateway

<https://www.youtube.com/playlist?list=PLcBrg-5drc85OKGcsVvhVlzyTP9gugZlf>

Winlink Master Class

https://www.youtube.com/watch?v=6-R6KDZjbxU&list=PLcBrg-5drc86usyVmDIL8jFHc8MYep_nv

Index

<https://wavetalkers.com/resources/index.php>

VARA FM for Emcomm – Must watch.

<https://www.youtube.com/watch?v=FAh8eg3Lk3A>

RATPAC

<https://www.ratpac.us/home>

https://www.youtube.com/playlist?list=PLJSh_yk04TNCUrkjbg82tUxeHjOyKVfIj

Training – Live Hands On

Winlink Wednesday - weekly

<http://winlinkwednesday.net/>

Winlink Thursday – Monthly (EMCOM Training)

<https://emcomm-training.org/>
